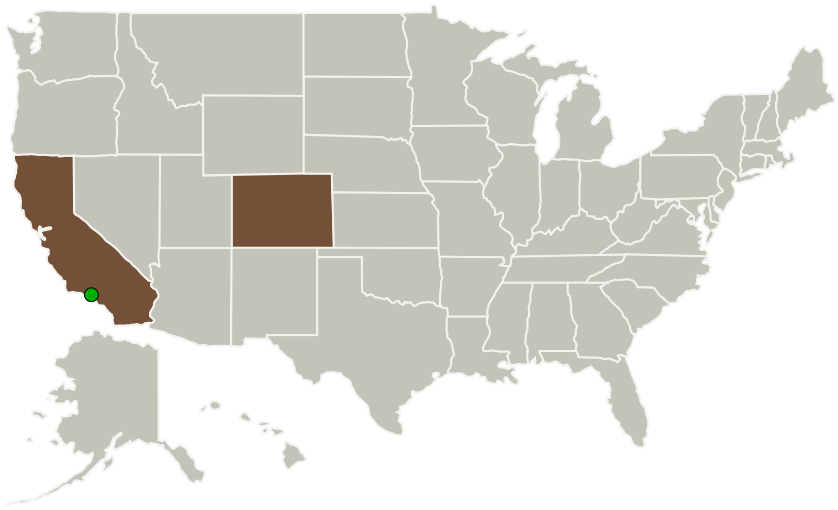
Non-Mechanical, Electro-Optic Beamsteerers for Space Based Laser Communications, Phase II

Completed Technology Project (2016 - 2016)

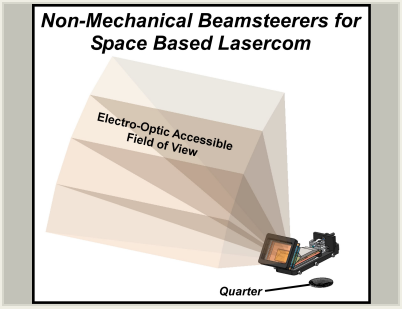
Project Introduction

In this phase II SBIR we will design, build, test, and deliver extremely low Size, Weight, and Power (SWaP) non-mechanical, electro-optic (EO) laser beamsteerers that are optimized for space based laser communications (lasercom). These new beamsteerers, which will finally satisfy the decades long dream of providing a viable alternative to opto-mechanics, will controllably steer high power (>10 Watts), low divergence (<100 micoradians) lasers with no moving parts. Novel self-calibrating, closed-loop stabilization techniques will provide very high pointing stability (<10 microradians). The outcome of this SBIR program will provide a critical component to help lasercom fulfill its long-standing scientific and commercial promise.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Vescent Photonics, Inc.	Lead Organization	Industry	Arvada, Colorado
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California



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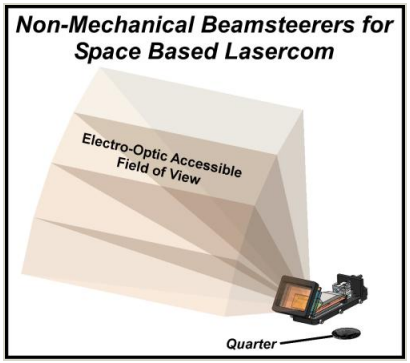
Primary U.S. Work Locations	
California	Colorado

Images



Briefing Chart Image
Non-Mechanical, Electro-Optic Beamsteerers for Space Based Laser Communications, Phase II *(https://techport.nasa.gov/image/127682)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Vescent Photonics, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

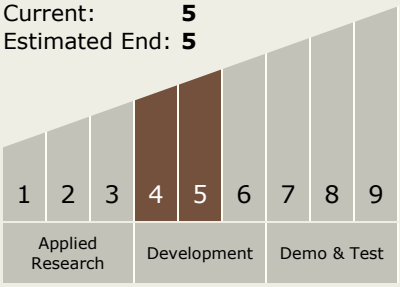
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Scott R Davis

Technology Maturity (TRL)

Start: **4**
Current: **5**
Estimated End: **5**



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Completed Technology Project (2016 - 2016)

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.1 Optical Communications
    - TX05.1.4 Pointing, Acquisition and Tracking (PAT)

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System